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Family Tetragonuridae

Body elongate, fusiform, deepest at front of spinous dorsal. Head broad above, moderate. Snout compressed, obtuse, end convex. Eye large, but slightly advanced in head length. Mouth moderate, jaws equal, mandibular ramus greatly elevated inside, with convex dental edge. Teeth moderate, compressed, present on palate. Gill opening large. ~~Scales small.~~ ~~Head most~~ No air bladder. Pyloric appendages numerous. Scales rather small, beveled, striated. Head largely scaly. Lateral line present. Dorsals continuous, soft rays fewer than spines. Anal like soft

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dorsal. Caudal forked, with
well developed rudimentary
rays. Pectoral short. Ventral
small, partly abdominal.

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• Genus Tetragonurus Risso

Tetragonurus Risso, Ichth. Nice,
p. 347, 1810. (Type Tetragonurus
cuvieri Risso, monotypic.)

Ctenodax Macleay, Proc. Linn. Soc.
New South Wales, vol. 10, p. 718, 1885.
(Type Ctenodax wilkinsoni Macleay,
monotypic.)

Depth $3\frac{1}{4}$ to $3\frac{4}{5}$; head $3\frac{1}{5}$ to $3\frac{1}{2}$, width $1\frac{3}{5}$ to 2. Snout $2\frac{2}{3}$ to 3 in head; eye $3\frac{1}{5}$ to $4\frac{1}{6}$, $1\frac{1}{4}$ ^{to $1\frac{1}{3}$} in snout, 1 to $1\frac{1}{8}$ in interorbital; maxillary reaches $\frac{1}{3}$ to $\frac{2}{5}$ in eye, expansion $1\frac{1}{4}$ to $1\frac{1}{2}$ in eye, length $2\frac{1}{6}$ to $2\frac{2}{5}$ in head; teeth granular, in about 3 irregular rows in each jaw; band of granular teeth on vomer and each palatine; interorbital $3\frac{1}{3}$ to $3\frac{4}{5}$, slightly concave; barbel $1\frac{1}{3}$ to $1\frac{1}{2}$. Gill rakers 6 to 8 + 16 to 20, lanceolate, $1\frac{1}{2}$ in gill filaments, which $1\frac{1}{5}$ in eye; 6 lower as rudiments.

Scales 32 to 34 in lateral line to caudal base and 3 or 4 more on latter; 3 above, 6 or 7 below, 14 to 16 predorsal; 3? or 4 rows on cheek. Scales with 5 basal radiating

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Body slender, plump, partly cylindrical. Head robust. Snout moderate. Eye large, less than snout. Mouth short, oblique, jaws box like. Teeth uniserial, close set, conic. Opercle entire. Gill membranes united below, free from isthmus. Scales hard, ciliated, grooved, very adherent. Lateral line single, straight or little curved. Dorsal divided, low short spines 15, soft rays fewer. Anal little smaller, similar to soft dorsal. Caudal small. Pectoral small. Ventral placed below middle of pectoral, with spine and 5 rays.

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Tetragonurus cuvieri Risso

Tetragonurus cuvieri Risso, Ichth.
Nice, p. 34 ^{pl. 10, fig. 3,} 1810 (type locality,
Nice); — Günther, Cat. Fish. Brit.
Mus., vol. 3, p. 408, 1861 (Sicily;
Mediterranean). — Goode and
Bean, Oceanic Ichth., p. 230, pl. ,
fig. 417, 1895 (Wood's Holl, Massa-
chusetts).

— Valenciennes, Hist. Nat. Poiss., vol.
11, p. 172, pl. 318, 1836 (Genoa; Nice;
Toulon). — Swanison, Nat. Hist.
Animals, vol. 2, p. 244, fig. 69, 1839
(copied).

Caudal gray to whitish, upper lobe with 3 or 4 oblique black bars and lower lobe with 2 or 3.

Red Sea, Mauritius, Reunion, Portuguese East Africa, Natal, Arabia, India, Ceylon, Pinang, East Indies, Philippines, China, Formosa, Japan, Queensland, Melanesia, Polynesia.

— McCulloch, Austral. Mus. Mem.,
no. 5, pt. 1, p. 122, June 29, 1929
(reference). — Fowler, Mem.
Bishop Mus., vol. 10, p. 140, 1928
(Hawaii). — McCulloch, Fishes
of New South Wales, ed. 3, p. 43,
pl. 15, fig. 157a, 1934.

Amia cyanotaenia (Bleeker)

Apogon cyanotaenia Bleeker, Nat. Tijds.
Ned. Indie, vol. 5, 1853, p. 71. Lawajang,
Solor. — Günther, Cat. Fishes Brit. Mus.,
vol. 1, 1859, p. 242 (copied). — Gorgoza,
Ann. Soc. Españ. Hist. Nat. Madrid, vol.
17, 1888, p. 253 (Cebu). — Weber, Zool.
Forschungsr. Austral. Vemon, vol. 5,
1895, p. 263 (Amboina). — Elera, Cat.
Fauna Filip., 1895, p. 471 (Cebu). — Weber,
Siboga Exped., vol. 65, 1913, p. 223 (Saleyer).
Amia cyanotaenia Bleeker, Atlas
Ichth. Ind. Néerl., vol. 7, 1873-76, p. 85,
pl. (42) 320, fig. 2 (Solor, Amboina,
Amu).

In the Philippines known from the
records of Gorgoza and Elera.

Tetragonurus cuvierii Sassi, Nov.
Ann. Sci. Nat. Bologna,
ser. 2, vol. 6, p. 390, 1846 (Genoa).

Tetragonurus atlanticus Lowe,
Fishes of Madeira, p. 129, pl. 19,
1843 (~~type locality~~, Madeira).
(Proc. Zool. Soc. London, p. 79, 1839
(type locality, Madeira)).

Ctenodax wilkinsoni Macleay,
Proc. Linn. Soc. New South Wales,
vol. 10, no. 4, p. 719, pl. 47, April 3,
1886 (type locality, Lord Howe
Island).

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1 example. Cebu market. March 20,
1909. Length 71 mm.

2 examples. Lampinigan Island,
south of Zamboanga. September 11, 1909.
Length 38 or 39 mm.

12 examples. Panabutan Bay, Mindanao.
February 5, 1908. Length 28 to 38 mm.

10 examples. Port Bais Anchorage, East
Luzon. March 31, 1908. Length 29 to 35 mm.

19 examples. D. 5561. Gomabal Island
(N. W.), S. 36° W., 0.2 mile ($5^{\circ}50'45''$ N.,
 $121^{\circ}01'15''$ E.). September 19, 1909.
Length 26 to 56 mm. These, as well as the
above small examples are all largely
scaleless, silvery and difficult of
determination. They seem to me most
likely the young of the present species.
Most all have some traces of 2 dark
blotches on each caudal lobe, also
some show traces of 2 dark bands on

Depth $5\frac{1}{3}$; head $3\frac{2}{3}$, width $3\frac{1}{2}$.
 Snout $2\frac{4}{5}$ in head; eye $4\frac{1}{3}$, $1\frac{1}{2}$ in
 snout, greater than interorbital;
 maxillary extends little beyond
 front eye edge, not quite opposite
 front pupil edge, length $2\frac{1}{5}$ in
 head; 32 upper, conic, subequal,
 rather well spaced, uniserial
 teeth, 36 lower, broad, close set,
 compressed, graduated larger
 posteriorly; vomer and palatines
 with few small conic teeth;
 interorbital $3\frac{2}{3}$, broadly convex.
 Gill rakers 7+9, lanceolate,
 long as gill filaments or $2\frac{1}{4}$ in
 eye.

Scales 100 along lateral line
 to middle caudal base; 7 above,
 12 below, 25 predorsal to occiput
 Lateral line at first parallel with
 dorsal profile, then slopes nearly
 median along side of caudal

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peduncle to middle of caudal
base, entire course shallow
groove.

D. XIX, 14, fourth spine 5 in
head, sixth ray $2\frac{1}{4}$; A. 13,
fourth ray $2\frac{1}{5}$, caudal $1\frac{1}{2}$,
median rays form obtuse angle
posteriorly; least depth of caudal
peduncle 6; pectoral $1\frac{9}{10}$, rays
14; ventral I, 5, fin $2\frac{9}{10}$ in head.

Uniform brownish, under
surface paler. Iris with neutral
gray to silvery tints.

New South Wales, Lord Howe
Island, Hawaii. Also in the
Atlantic and Mediterranean.

Described above from an example
94 mm long from Honolulu in the
M. C. Z. Cambridge.

U. S. N. M., No. 44436, Wood's
Holl, Massachusetts. V. N. Edwards.
Length 75 mm. Nov. 10, 1890.
D. XV, I, 10; A. I, 10.

U. S. N. M., No. 85476. Lat. $38^{\circ}29'$
 $17'N.$, long. $70^{\circ}45'W.$; Albatross
Collection (2715). Length 25 mm.

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9795, 12577, 12578, Cuxisiyan Island,
north Bulabac Strait. January 2,
1909. Length 134 to 141 mm.

8572, Cebu market. April 5, 1908.
Length 137 mm.

17724. Cuyo, Cuyo Island. April 9,
1909. Length 117 mm.

109. Endeavor Strait, Malampaya
Sound, Palawan Island. December
23, 1908. Length 90 mm.

6794, 7374, 7375. Gigoro Point,
Linaupundan Bay, Samar Island.
July 28, 1909. Length 108 to 138 mm.

9211 and 9212. Guntao Island,
Palawan. Passage. December 20, 1908.
Length 127 to 148 mm.

11090 and 18861. Inamucan Bay,
Mindanao Island. August 8, 1909.
Length 93 to 150 mm.